

EXPOSURE METHOD AND APPARATUS

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Abstract:

PROBLEM TO BE SOLVED: To provide an exposing method and an apparatus which enable the exposure of a pattern of contact holes in high resolution (i.e., as for a column of contact holes, the equivalent resolution as an L & S pattern using a phase shift mask) without changing a mask, which has fine hole diameters (e.g., $\leq 0.15 \mu\text{m}$) and is mixed with contact holes varying from a contact hole or an isolated contact hole to the columns of contact holes. SOLUTION: A subject to be exposed is exposed by lightening a mask having a pattern of contact holes and an auxiliary pattern smaller than the pattern of contact holes with a light that forms an effective light source having an empty center of non circular shape, and projecting the pattern of contact holes on the subject to be exposed using a projecting optical system.

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